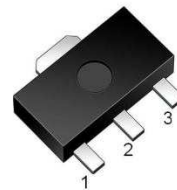


**REPLACEMENT TYPE : BC869**
**FEATURES**

- NPN Complement to HEBC868
- Low Voltage
- High Current



SOT-89

1:BASE 2:COLLECTOR 3:EMITTER

**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-32	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-20	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current-Continuous	I <sub>C</sub>	-1	A
Collector Power Dissipation	P <sub>C</sub>	500	mW
Thermal Resistance From Junction to Ambient	R <sub>θJA</sub>	250	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C

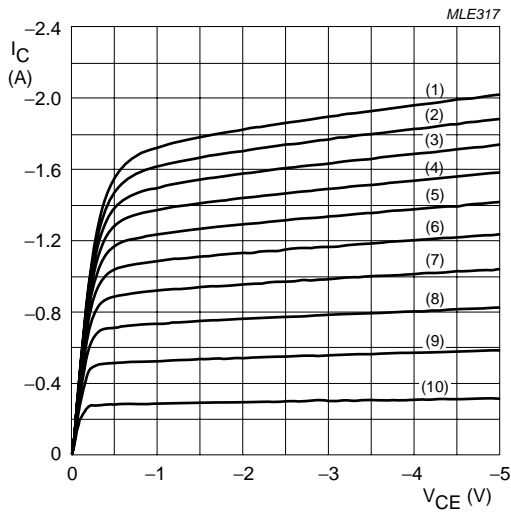
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V <sub>CBO</sub>	I <sub>C</sub> =-100uA, I <sub>E</sub> =0	-32			V
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-20			V
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =-100uA, I <sub>C</sub> =0	-5			V
Collector Cut off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-25V, I <sub>E</sub> =0			-0.1	uA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0			-0.1	uA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-5mA	50			
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-1V, I <sub>C</sub> =-0.5A	100		375	
	h <sub>FE(3)</sub>	V <sub>CE</sub> =-1V, I <sub>C</sub> =-1A	60			
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-0.1A			-0.5	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	V <sub>CE</sub> =-1V, I <sub>C</sub> =-1A			-1	V
		V <sub>CE</sub> =-10V, I <sub>C</sub> =-5mA		-0.62		
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA, f=100MHz	40			MHz

**CLASSIFICATION OF h<sub>FE</sub>**

Rank	BC869	BC869-16	BC869-25
Range	100-375	100-250	160-375
Marking	CEC	CGC	CHC

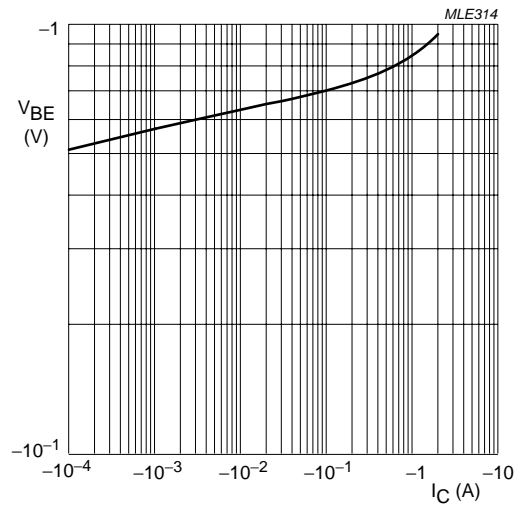
**Typical Characteristics**



**BC869-16.**

- (1)  $I_B = -18$  mA.      (5)  $I_B = -10.8$  mA.      (9)  $I_B = -3.6$  mA.
- (2)  $I_B = -16.2$  mA.    (6)  $I_B = -9.0$  mA.        (10)  $I_B = -1.8$  mA.
- (3)  $I_B = -14.4$  mA.    (7)  $I_B = -7.2$  mA.
- (4)  $I_B = -12.6$  mA.    (8)  $I_B = -5.4$  mA.

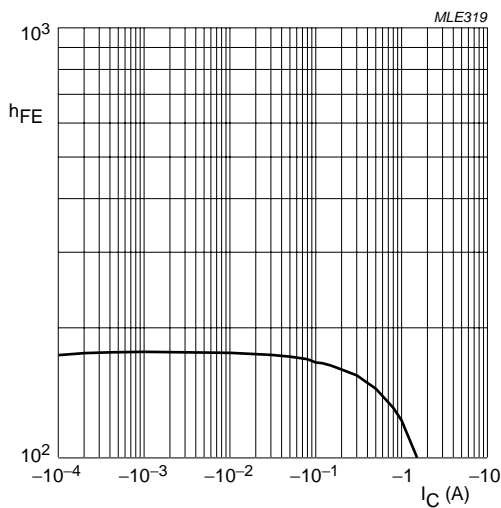
**Fig.5** Collector current as a function of collector-emitter voltage; typical values.



**BC869-16.**

$V_{CE} = -1$  V.

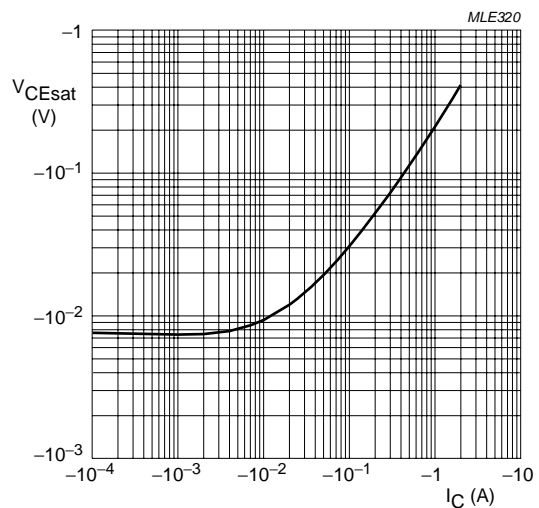
**Fig.6** Base-emitter voltage as a function of collector current; typical values.



**BC869-16.**

$V_{CE} = -1$  V.

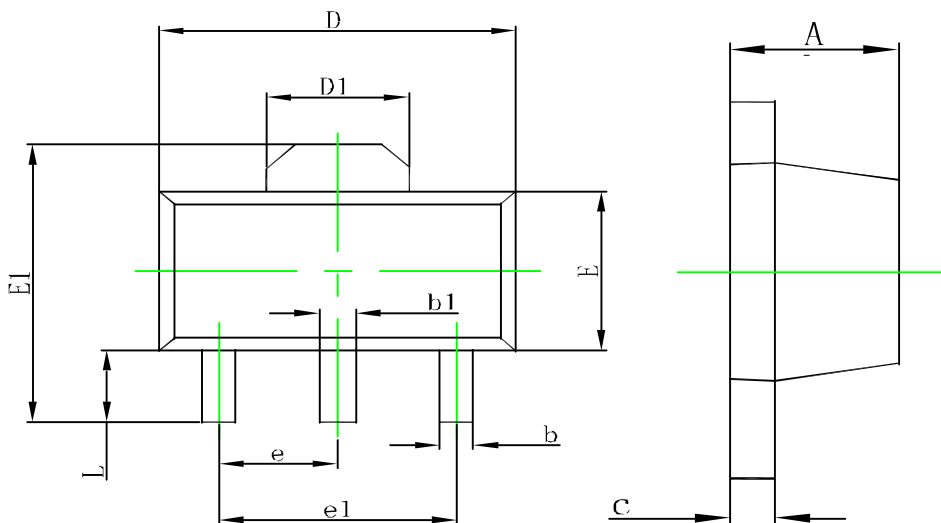
**Fig.7** DC current gain as a function of collector current; typical values.



**BC869-16.**

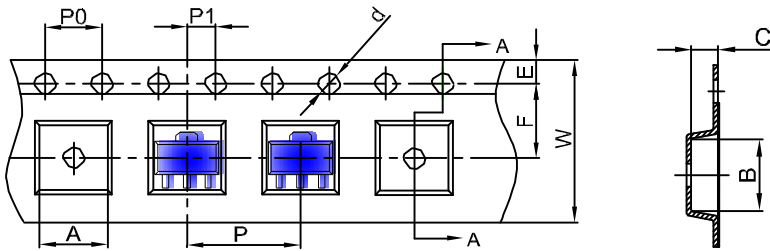
$I_C/I_B = 10$ .

**Fig.8** Collector-emitter saturation voltage as a function of collector current; typical values.

**SOT-89 Package Outline Dimensions**


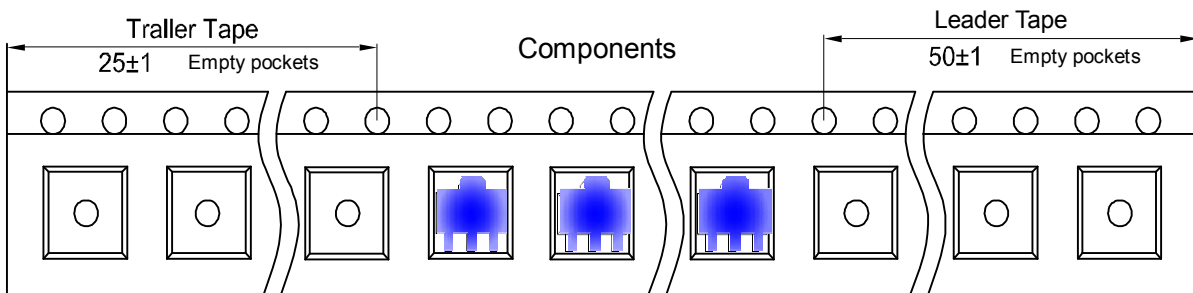
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550REF.		0.061REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP.		0.060TYP.	
e1	3.000TYP.		0.118TYP.	
L	0.900	1.200	0.035	0.047

**SOT-89 Tape and Reel**

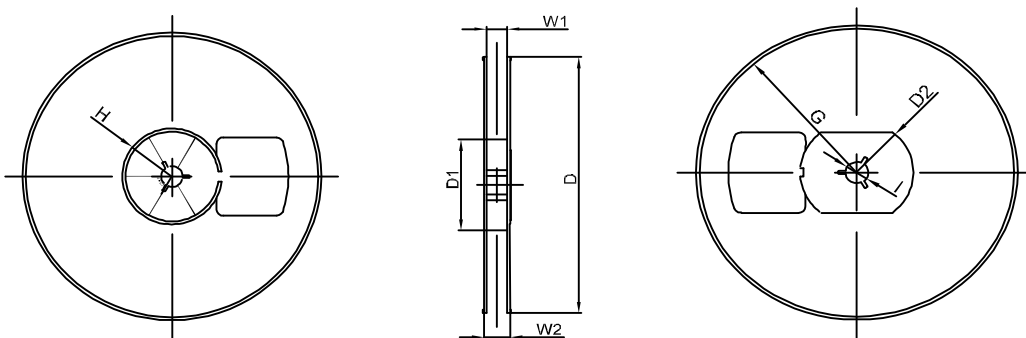


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	φ1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**SOT-89 Tape Leader and Trailer**



**SOT-89 Reel**



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	φ 180	60.00	R32.00	R86.50	R30.00	φ 13.00	13.20	16.50
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1